The Learning Company™

Gertrude's Puzzles™

Designer: Teri Perl, Ph.D.

The Learning Company
545 Middlefield Road
Menlo Park, CA 94025

Gertrude's Puzzles

Gertrude's Puzzles runs on:

- ☐ Apple II, 48K
- ☐ Apple II+, 48K
- ☐ Apple IIe
  (with CAPS LOCK key down)

With:

- ☐ Disk] [
- ☐ Color Monitor or TV

For:

- ☐ Ages 8-13

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Attn: Disk Return Dept.

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WELCOME TO GERTRUDE'S PUZZLES

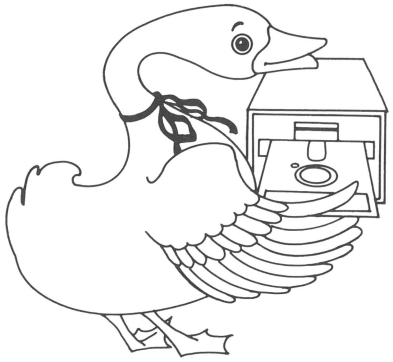
Meet Gertrude, the puzzle-loving goose. She has some challenging puzzles for you to solve. They will help you learn to see similarities and differences, to recognize patterns, and to categorize information. These are all important learning skills. You will use them in math, in reading, in science . . . in every area of life.

Her puzzles also make you think. Figuring them out takes logic and deductive reasoning: This shape goes here. It doesn't go there. Therefore, the solution must be this.

Take your time. Think it out. Gertrude's puzzles are tricky, but fun. Each time you solve a puzzle, Gertrude will light up your screen, play the music, and fly in with a treasure for you.

P.S. Some people may think that Gertrude's Puzzles is just for fun. To see what you are learning, turn to THE LEARNING LIST on page 16.

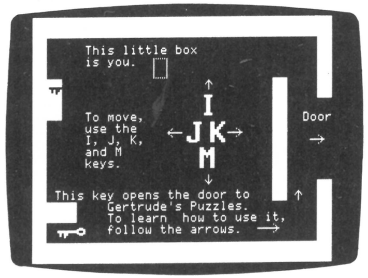
GETTING STARTED



Put your Gertrude's Puzzles disk in the disk drive and close the door. Turn on your computer.

If you are using an Apple IIe computer, be sure the CAPS LOCK key is pressed down.

THE LEARNING ROOMS


This little box is you.
To move, use the I, J, K, and M keys.
I
J K
M
Door
This key opens the door to Gertrude's Puzzles. To learn how to use it, follow the arrows.

As soon as the program is loaded, you will see the title screen. Then you will see Gertrude's first "learning" room.

Is this the first time you have played Gertrude's Puzzles? You will need to learn:

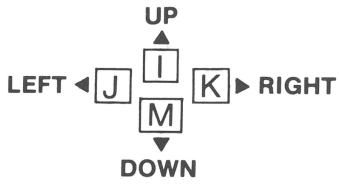
- how to move.
- how to pick up and drop objects.

This is what you move: ▯. It's the green box on your screen. It's called a "cursor."

You move your cursor to travel from room to room. Arrows and signs point the way.

HOW TO MOVE

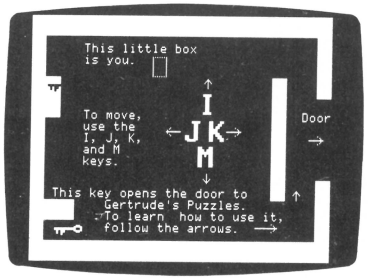
First, learn to move your cursor. These are the keys you press:



Practice moving. Then follow the arrow. Move through the open door on the right of your screen.

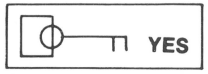
In the next rooms you can find out how to:

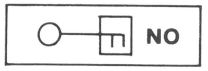
- pick up and drop things.
- move faster or slower.
- use a joystick instead of your keyboard.
- turn the sound off and on.


This little box is you.
To move, use the I, J, K, and M keys.
I
J K
M
Door
This key opens the door to Gertrude's Puzzles. To learn how to use it, follow the arrows.

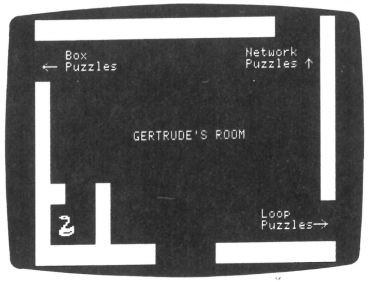
If you already know how to do these things, you can take a shortcut to the games. Pick up the key and put it in the lock above. The hidden door to Gertrude's Puzzles will open.

PLEASE NOTE: YOU MUST PICK UP THE KEY BY ITS HANDLE. OTHERWISE, THE KEY WILL NOT FIT IN THE LOCK AND THE DOOR WILL NOT OPEN FOR YOU.



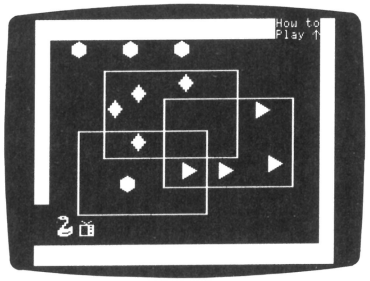


HOW TO PLAY



To play, you must first find Gertrude. She is resting in her nest.

- Move your cursor to GERTRUDE'S ROOM.
- Pick Gertrude up. Take her to the puzzle room of your choice.
- Let Gertrude go. She will fly off and return with a set of puzzle pieces.
- Go through the door marked "HOW TO PLAY." Read the instructions in the rule room. Then take a look at the sample puzzle.
- When you are ready, move back to the puzzle room. Pick up a piece and drop it in a box. Think about the rule that will solve the puzzle. Keep trying until you can find the solution.



When you win, Gertrude will bring you a treasure. Win 12 treasures in a row and become a Master Puzzler.

To play the puzzle again:
Pick Gertrude up. The old pieces will return to the STORE ROOM. Your treasure will pop to the TREASURE ROOM.

Now, let go of Gertrude. She will fly to the STORE ROOM and bring back a new set of pieces. As you play, Gertrude will rest in her nest.

To begin a different puzzle:
Pick up Gertrude. If she is not next to your treasure, look for her in her nest. Carry her to the new puzzle room. Let her fly off for the pieces.

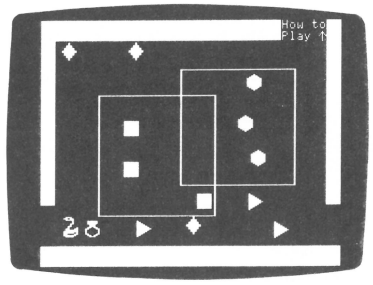
GERTRUDE'S PUZZLES

Gertrude has dozens of challenging puzzles, all for you to solve. When you reach a correct solution, Gertrude will bring you a treasure.

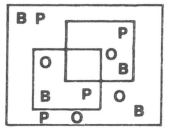
There are three different types of puzzles: LOOPS, NETWORKS and BOXES.

GERTRUDE'S LOOPS:

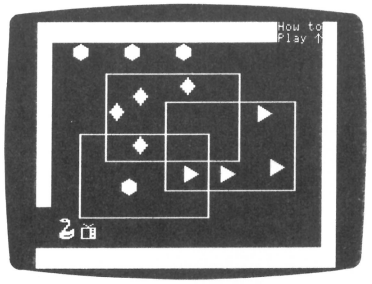
- **2-loop Puzzle (Easier)**
  Pay attention to colors and shapes to guess which pieces belong in each box. Pieces that belong in both boxes go in the overlapping part. You can tell when your guess is wrong. The piece falls out of the box! Each time you play, Gertrude may have different rules.

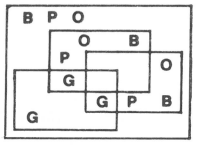


COLOR CODE:
B = BLUE
O = ORANGE
G = GREEN
P = PURPLE

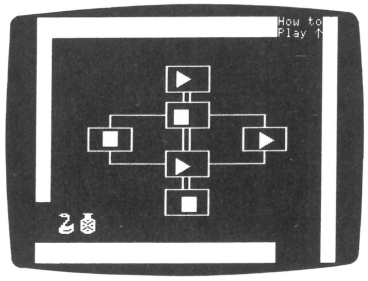


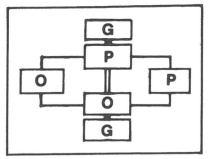
- **3-loop Puzzle (Harder):**
  Now Gertrude has three shape or color rules for you to guess, one for each box. As in the puzzle above, you figure out which pieces belong in each box. This puzzle has many overlapping parts. These are for pieces that belong in more than one box.



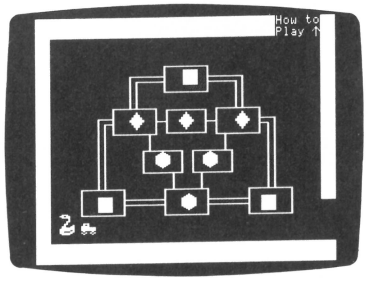


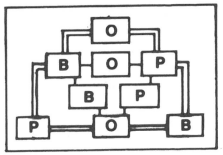
GERTRUDE'S NETWORKS





- **6-box Network Puzzle (Easier):**
  Notice the network lines as you place each piece in a box. Boxes connected by one line need pieces that differ from each other in only one way (different shape *or* different color). Boxes connected by two lines need pieces that differ from each other in two ways (different shape *and* different color).

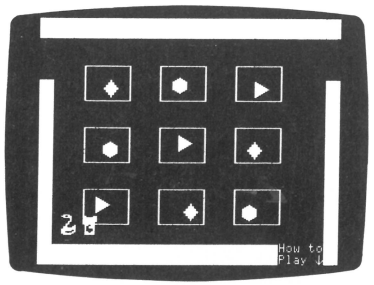


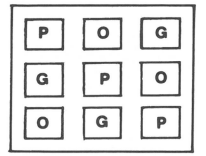


- **9-box Network Puzzle (Harder):**
  This is like the puzzle above, but the three added boxes make it much more difficult to solve.

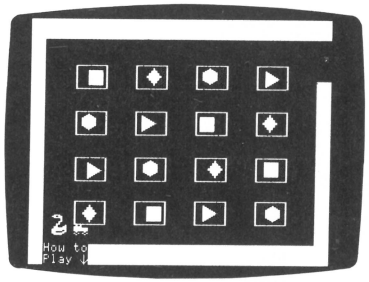
  If you fill up all the boxes and nothing happens, you have not solved the puzzle correctly. For a clue, press [SPACEBAR]. You will see pieces move. Rearrange the pieces until you solve the puzzle.

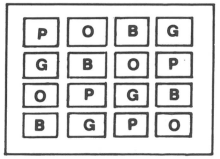
GERTRUDE'S BOX PUZZLES





- **3 x 3 Box Puzzle (Easier):**
  Place one puzzle piece in each box. Sound easy? It's not. Every row must have only one piece of each color and one piece of each shape. The same goes for the columns.





- **4 x 4 Box Puzzle (Harder):**
  Place one piece in each box. Every row and column must have only one piece of each color and only one piece of each shape. To add to the difficulty, the pieces in the diagonals (from corner to corner) must also be different colors and shapes. Good luck!

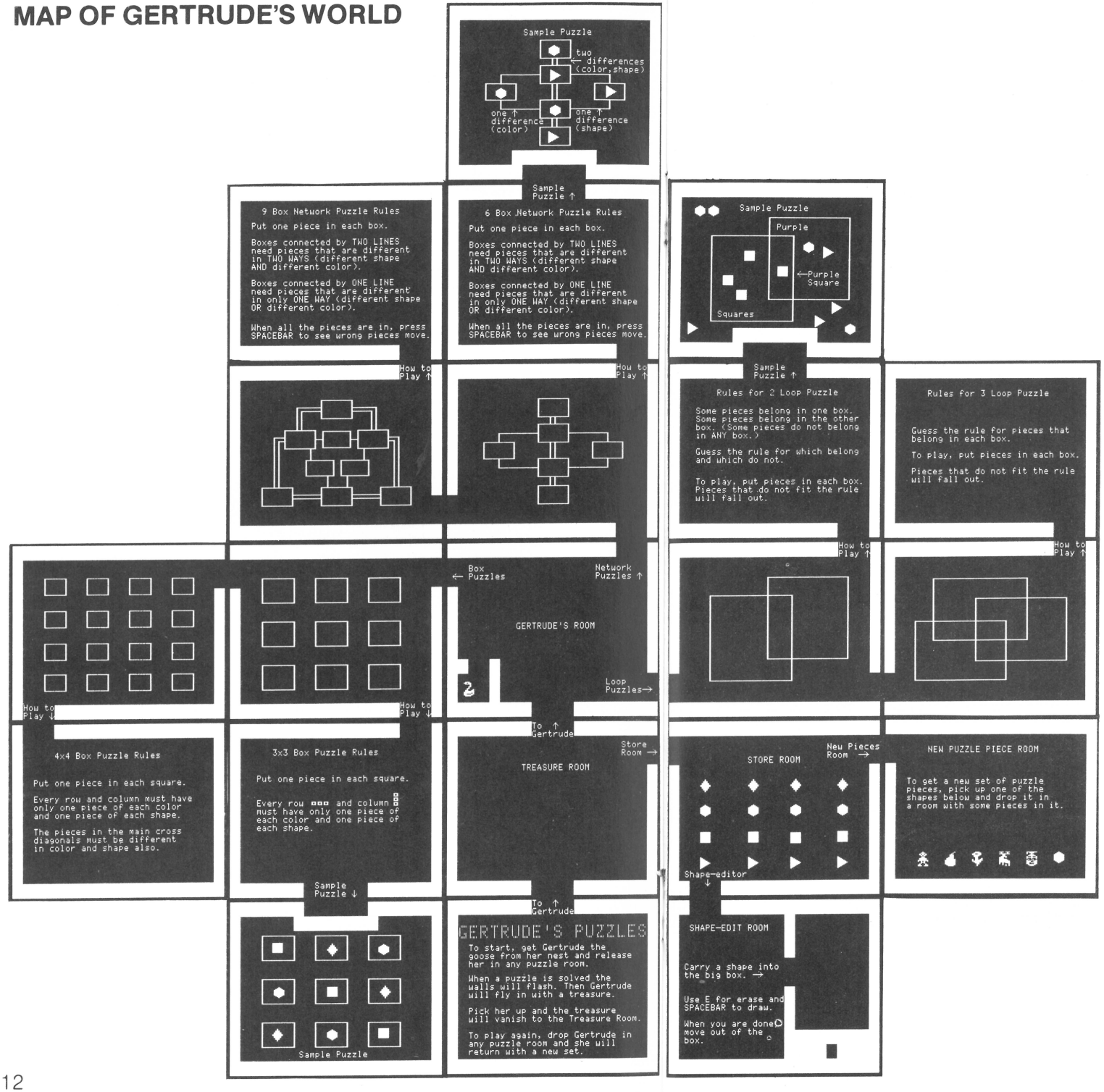
If you can't solve this puzzle, look for some patterns in the solution here. Notice the corner pieces. Look at the middle four pieces.

A map of Gertrude's world can be found on pages 12 and 13 of this manual. The map shows you the puzzles and many other special rooms.

Look for these rooms on the map:

- **Rule Rooms:** These tell you how to work each puzzle.
- **Sample Rooms:** These show you one solution to each puzzle.

MAP OF GERTRUDE'S WORLD


Sample Puzzle
two ← differences (color,shape)
one ↑ difference (color)
one ↑ difference (shape)
Sample Puzzle ↑
9 Box Network Puzzle Rules
Put one piece in each box.
Boxes connected by TWO LINES need pieces that are different in TWO WAYS (different shape AND different color).
Boxes connected by ONE LINE need pieces that are different in only ONE WAY (different shape OR different color).
When all the pieces are in, press SPACEBAR to see wrong pieces move.
6 Box Network Puzzle Rules
Put one piece in each box.
Boxes connected by TWO LINES need pieces that are different in TWO WAYS (different shape AND different color).
Boxes connected by ONE LINE need pieces that are different in only ONE WAY (different shape OR different color).
When all the pieces are in, press SPACEBAR to see wrong pieces move.
Sample Puzzle
Purple
←Purple Square
Squares
How to Play ↑
How to Play ↑
Sample Puzzle ↑
Rules for 2 Loop Puzzle
Some pieces belong in one box. Some pieces belong in the other box. (Some pieces do not belong in ANY box.)
Guess the rule for which belong and which do not.
To play, put pieces in each box. Pieces that do not fit the rule will fall out.
Rules for 3 Loop Puzzle
Guess the rule for pieces that belong in each box.
To play, put pieces in each box.
Pieces that do not fit the rule will fall out.
How to Play ↑
How to Play ↑
Box Puzzles ←
Network Puzzles ↑
GERTRUDE'S ROOM
Loop Puzzles→
How to Play ↓
How to Play ↓
To ↑ Gertrude
Store Room →
TREASURE ROOM
New Pieces Room →
STORE ROOM
NEW PUZZLE PIECE ROOM
To get a new set of puzzle pieces, pick up one of the shapes below and drop it in a room with some pieces in it.
Shape-editor ↓
4x4 Box Puzzle Rules
Put one piece in each square.
Every row and column must have only one piece of each color and one piece of each shape.
The pieces in the main cross diagonals must be different in color and shape also.
3x3 Box Puzzle Rules
Put one piece in each square.
Every row ■■■ and column ■■■ must have only one piece of each color and one piece of each shape.
Sample Puzzle ↓
To ↑ Gertrude
GERTRUDE'S PUZZLES
To start, get Gertrude the goose from her nest and release her in any puzzle room.
When a puzzle is solved the walls will flash. Then Gertrude will fly in with a treasure.
Pick her up and the treasure will vanish to the Treasure Room.
To play again, drop Gertrude in any puzzle room and she will return with a new set.
Sample Puzzle
SHAPE-EDIT ROOM
Carry a shape into the big box. →
Use E for erase and SPACEBAR to draw.
When you are done move out of the box.

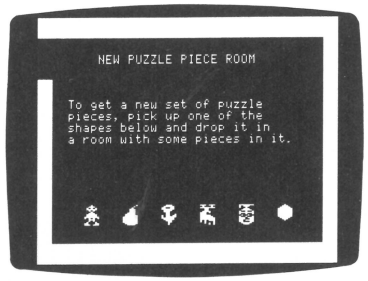
You are here when the door opens. ▲

TWO SPECIAL ROOMS

Would you like to play with different puzzle pieces? You can trade them in for ones you like better. And you can make your own pieces.

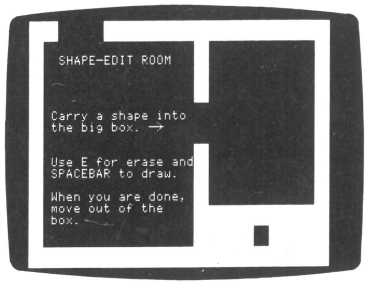
Look at the map on pages 12 and 13. Find the rooms described here. Move your cursor to each of the rooms. Try them both out.

NEW PUZZLE PIECE ROOM


NEW PUZZLE PIECE ROOM
To get a new set of puzzle pieces, pick up one of the shapes below and drop it in a room with some pieces in it.

Pass through the STORE ROOM to get to this room. You can turn puzzle pieces into flowers or animals, or any of the other shapes waiting in line for you. Pick up the shape you like. Carry it to the STORE ROOM and drop it. Watch what happens. All puzzles you play will now have the new pieces you selected.

SHAPE-EDIT ROOM:



This room is below the STORE ROOM. As you pass through the STORE ROOM, pick up a shape. Carry it to the SHAPE-EDIT ROOM and put it inside the large box. Your shape becomes magnified. The small box below shows the piece in its original size.

Place your cursor anywhere on the magnified shape. Press [E] (or the bottom joystick button). This erases a piece from the shape. Press [SPACEBAR] (or the *top* joystick button) to add to the shape. When you are finished, move your cursor to the STORE ROOM. See what changes you have made.

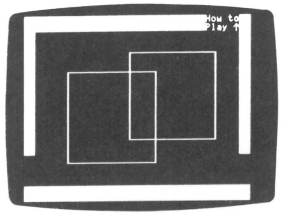
WARNING: If you erase the shape completely and drop it outside the box, both it and the corresponding shapes in the storeroom will be gone. Try not to do this. You will have to turn off the computer and then start again to get the shape back.

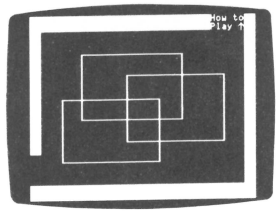
THE LEARNING LIST

Gertrude has three different kinds of puzzles. Each has easier and more challenging versions. Gertrude hopes you will try all three kinds. She suggests you do the easier puzzles first. Be sure to check out the SHAPE-EDIT ROOM, too.

PUZZLES	THE SKILLS AND CONCEPTS PRESENTED

GERTRUDE'S LOOPS
(2 versions, easier and harder)

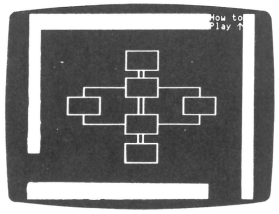


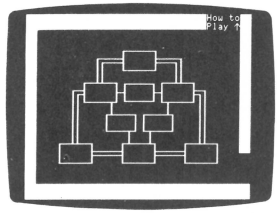


- ☐ Discriminating shapes and colors.
- ☐ Solving loop (Venn diagram) puzzles.
- ☐ Categorizing and inferring rules.
- ☐ Using deductive reasoning.
- ☐ Solving problems with minimal clues.

PUZZLES	THE SKILLS AND CONCEPTS PRESENTED

GERTRUDE'S NETWORKS
(2 versions, easier and harder)

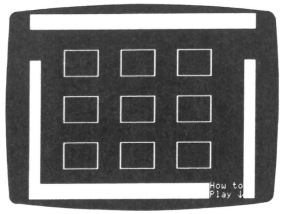


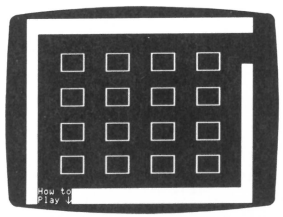


- ☐ Discriminating shapes and colors.
- ☐ Identifying relationships between objects.
- ☐ Categorizing and analyzing patterns and rules.
- ☐ Building network relations.
- ☐ Discovering multiple solutions.

PUZZLES	THE SKILLS AND CONCEPTS PRESENTED

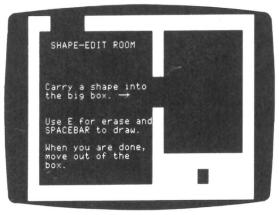
GERTRUDE'S BOX PUZZLES
(2 versions, easier and harder)





- ☐ Arranging patterns of shapes and colors according to difference rules.
- ☐ Categorizing and analyzing color and shape patterns and relationships.
- ☐ Using deductive reasoning.
- ☐ Discovering patterns leading to solutions.
- ☐ Evaluating partial solutions to arrive at complete solutions.
- ☐ Developing and testing solution strategies.
- ☐ Discovering multiple solutions.

SHAPE-EDIT ROOM



- ☐ Using computer graphics techniques.
- ☐ Thinking creatively.

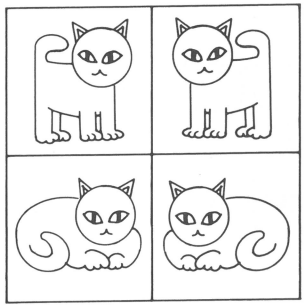
ADDITIONAL ACTIVITIES

PUZZLE CARDS

You need four sheets of colored construction paper, each sheet a different color. Fold each sheet in half. Fold it in half again. This will give you four sections on each sheet.

Think of a design that can be easily changed in four ways. On each sheet of paper, draw the four variations of your design. Here is one example:

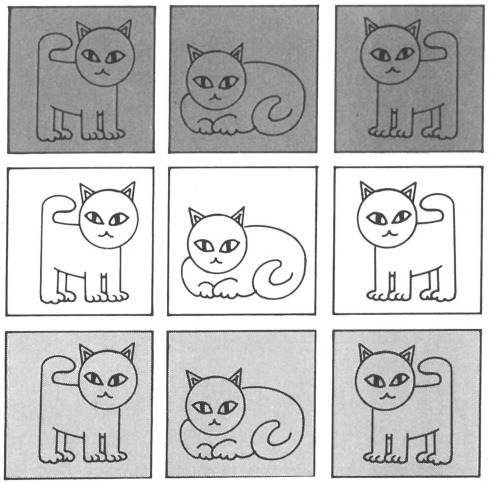
Cut along the fold lines to make 16 puzzle cards, four of each color and design.



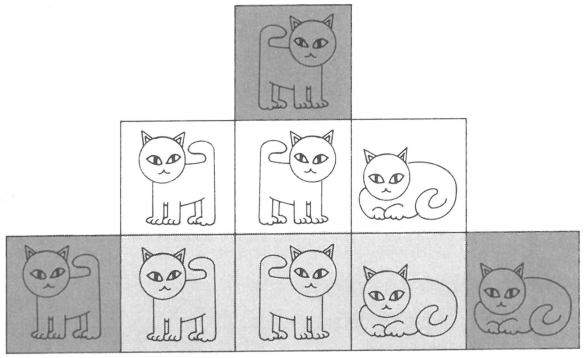
Use these cards to play sorting and puzzle games. Below you will find some suggestions.

PUZZLE CARD SQUARES AND PYRAMIDS

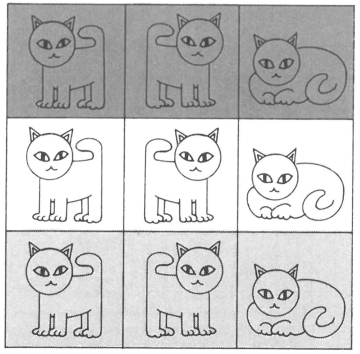
Form a set of nine puzzle cards, three of each design and color. Example:



Arrange the set in a pyramid so all touching pieces are different in *one* way. This is one solution. How many different solutions can you find?



Next, arrange the cards in a box puzzle. The same rule applies: each touching piece is different in one way. How many different solutions can you find now? Can you arrange the cards to make a two-difference pyramid and square?



Try using all 16 cards to make a bigger pyramid and square. First try one difference, then two-difference pyramids and squares. Do you see an easy way to go from a pyramid solution to a square solution?

GO GET GERTRUDE!

This is a card game for 2 or more players. You need a die and a deck of playing cards. Shuffle and deal eight cards to each player. Stack the remaining cards face down on the table. Turn up the top card. Place it next to the stack face up.

Players will find it helps to arrange their hands in numerical order by suits (hearts, clubs, diamonds, spades). Decide who plays first by rolling the die. Highest roll begins. Play moves clockwise around the table.

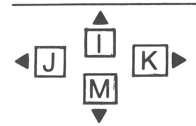
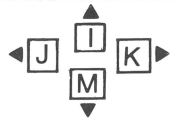
To win you must be the first to discard all the cards in your hand. You may discard only one card each turn. Your discard must differ from the last card played according to the roll of the die. If you roll an even number, you must play a one-difference card. An odd number means you play a two-difference card. Each turn you must roll the die. Here is the die rule:

EVEN-NUMBER ROLL	=	PLAY A ONE-DIFFERENCE CARD
(2, 4, 6)		□ Different suit/same number/same color. □ Different number/same suit/same color.

ODD-NUMBER ROLL	=	PLAY A TWO-DIFFERENCE CARD
(1, 3, 5)		□ Different suit/different color/same number. □ Different suit/different number/same color.

What if you can't play a card? Draw from the stack until you find one to discard. You must keep all the cards you draw. If anyone plays an incorrect card, say: "GO GET GERTRUDE!" If you are right, that player must take back the card, draw another card from the stack, and forfeit the turn. However, if someone has already played on the incorrect card, the erring player is off the hook.

SPECIAL KEYS

KEY		FUNCTION
Apple II+	**Apple IIe**	
		[I] moves the cursor up. [M] moves the cursor down. [J] moves the cursor to the left. [K] moves the cursor to the right.
[CTRL]	[CONTROL]	Press this with [I], [J], [K], or [M] to move the cursor a short distance (for fine control).
[CTRL] — [G]	[CONTROL] — [G]	Press both keys at the same time to turn the sound ON or OFF.
[REPT] — [I] [REPT] — [J] [REPT] — [K] [REPT] — [M]	Hold down [I], [J], [K], [M]	Make the cursor move continuously ([REPT] means 'Repeat').
[SPACEBAR]	[SPACEBAR]	Pick up or drop objects.
[SHIFT] — [?]	[SHIFT] — [?]	Press both keys at the same time to see the special keys list on the screen.
[ESC]	[ESC]	Leave the game.
	[CAPS LOCK]	Makes all capital letters when down. NOTE: CAPS LOCK MUST BE IN DOWN POSITION TO PLAY GERTRUDE'S PUZZLES ON THE APPLE IIe COMPUTER.

With a joystick:

If you have a joystick

- Press either button to "wake up" the joystick.
- Use the joystick handle to move around.
- Press either button to pick up or drop objects.

For best results, use a joystick with a handle that returns to the center when it is released.

GLOSSARY

ARRAY

An orderly arrangement of objects. In Gertrude's Puzzles, the arrays are arrangements of boxes in rows and columns.

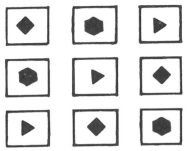
ATTRIBUTE

A feature or characteristic of an object. For example, color and shape are attributes of the puzzle pieces in Gertrude's Puzzles.

COLUMN

An arrangement of boxes in a vertical line.

GRAECO-LATIN SQUARES



An arrangement of objects in a square array (Box Puzzles). The objects have two distinguishing attributes (in Gertrude's Puzzles they are shape and color). The arrangement requires that no two objects of the same color or shape may appear in the same row or column. In the 4 x 4 array, the main cross diagonals must also conform to the rule.

LOOP PUZZLE

The Loop Puzzles in Gertrude's Puzzles are technically known as "Venn diagrams." (See below.)

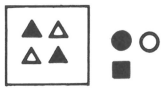
MAIN CROSS DIAGONALS

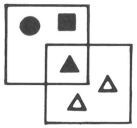
An arrangement of boxes from corner to corner in a square array.

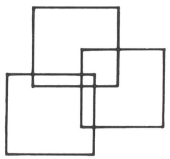
ROW

An arrangement of boxes in a horizontal line.

VENN DIAGRAMS







Venn diagrams are useful in picturing sets and the relationships between sets. For example, if the set is triangles, triangles would appear inside the box, non-triangles outside the box. If there are two rules, for example, blue shapes and triangles, the blue shapes fit in one box. The triangles fit in the other. Blue triangles (fitting both rules) go in the middle where the two boxes overlap. In Gertrude's Puzzles you will also find a 3-loop (or 3-box Venn diagram) puzzle. A 3-loop could represent:

1st square: blue pieces
2nd square: green pieces
3rd square: triangles

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